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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,279	12/11/2001	Johnny Paul Speir	140-067a	2332
7590 10/30/2003				
Ward & Olivo 708 Third Ave New York, NY 10017			EXAMINER KENEDY, ANDREW A	
			ART UNIT	PAPER NUMBER
			1631	

DATE MAILED: 10/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 10/014,279	<b>Applicant(s)</b> SPEIR, JOHNNY PAUL	
	<b>Examiner</b> Andrew A. Kenedy	<b>Art Unit</b> 1631	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3 recites the limitation "said determined molecular structures" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. Claim 3 is dependent on claim 1 which recites the limitations "determine the molecular weight" and "determine the empirical formula", neither of which are "molecular structures".
3. Claim 11 recites the limitation "said determined molecular structures" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. Claim 11 is dependent on claim 9 which recites the limitations "determine the molecular weight" and "determine the empirical formula", neither of which are "molecular structures".
4. Claim 14 recites the limitation "said determined molecular structures" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. Claim 14 is dependent on claim 12 which recites the limitations "determine the molecular weight" and "determine the empirical formula", neither of which are "molecular structures".
5. The term "complex" in line 1 of claims 1, 4, 6, 9, 12, is a relative term that renders the claims indefinite. The term "complex" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In this instance for example, it is unclear whether the term "complex" refers to more than 1 molecular compound in the sample, more than 10 molecular compounds in the sample, or more than 1,000 molecular compounds in the sample, etc.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2 and 4-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yates. With regard to Claim 1, Yates teaches the use of a Fourier Transform Mass Spectrometer (FTMS) for analyzing a complex biological sample (page 2, col. 1, lines 53-56; page 2, col. 2, lines 3-5; page 3, col. 1, lines 17-28) comprising: ionizing a sample to produce (molecular) ions (page 2, col. 2, lines 9-17), introducing said ions into an analysis region of said FTMS (page 2, col. 2, lines 9-12; page 5, col. 2, lines 36-37; page 6, col. 1, lines 46-52; page 6, col. 2, lines 42-44), analyzing said ions to determine the molecular weight and abundance (page 2, col. 2, lines 3-5; page 2 col. 2 lines 17-23; Fig. 1 legend; page 11, col. 1, line 18 through page 11, col. 2, line 13), utilizing said molecular weight to determine the empirical formula of each species of said sample (Fig. 5 and 6), and identifying each said species by comparing said empirical formula to a database of formulas for known molecules (Fig. 3 and 4; page 9, col. 1, line 40 through page 10, col. 1, line 5). With regard to Claim 4, Yates is applied as above and further teaches determining the molecular structure of each species by multiple stages of mass spectrometry (Fig. 1, 4, 5, and 6; page 9, col. 1, line 6 through page 12, col. 1, line 21) and producing a profile of the sample showing structure and concentration data for each species (Fig. 1, 5, and 6; page 9, col. 2, lines 4-9; page 11, col. 1, line 18 through col. 2, line 13). With regard to Claim 6, Yates is applied as above and further teaches fragmenting sample precursor ions to produce fragment ions, determining the molecular weight, abundance, and empirical

formula of said fragment ions, determining the structure of said fragment ions by comparing said empirical formulas of said fragment ions to a database of fragments with known structure, combining the precursor ion structure for each species in said sample, and producing a profile of the sample showing structure and concentration data for each selected species of said sample (Fig. 1, 4, 5, and 6; page 9, col. 1, line 6 through col. 2, line 62). With regard to Claim 8, Yates is applied as above and further teaches performing fragmenting using photodissociation (page 2, col. 2, line 42 through page 3, col. 1, line 15). With regard to Claim 9, Yates is applied as above and further teaches ionizing polar molecules using positive and negative electrospray to produce sample (molecular) ions (page 2, col. 1, lines 34-56, page 6, col. 1, line 22 through page 7, col. 1, line 15). With regard to Claims 2, 5, 7 and 10, Yates is applied as above and further teaches the limitation wherein said determining of the molecular weight is performed with an accuracy sufficient to identify empirical formula of said ions (Fig. 5 and 6).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yates in view of Moore et al. Yates is applied as above. Yates does not teach updating a database with the determined molecular structures. Moore et al. teaches updating a database with the determined molecular structures (see entire document, particularly column 2, line 55 through column 3, line 6). It would have been obvious for one of ordinary skill in the art to update a database with the molecular

structures determined by the method of Yates, since Moore et al. (col. 2, line 55 through col. 3, line 6) explains that updating a database with molecular structure data allows "the routine integration of chemical structure data with other related information...to allow better usage of all types of chemical information in both commercial and research settings", allows "the user to be notified of any new chemicals that are entered into the database", and allows users to "later call up this information in a quick and efficient manner without re-entering or performing previously run queries".

10. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yates in view of Franzen et al. Yates is applied as above. Yates does not teach ionizing non-polar molecules using positive and negative ion atmospheric pressure chemical ionization to produce sample (molecular) ions. Franzen et al teaches positive and negative ion atmospheric pressure chemical ionization (col. 3, lines 45-51). It would have been obvious for one of ordinary skill in the art to use positive and negative ion atmospheric pressure chemical ionization as taught by Franzen et al. with the methods of Yates, since Yates teaches the use of electrospray ionization for ionizing polar -- not non-polar -- molecules (page 2, col. 1, lines 34-56), and Franzen et al. teaches that "not all substances can be ionized using the electrospray method" (col. 1, lines 63-63).

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yates and Franzen et al. in view of Moore et al. Yates and Franzen et al. are applied as above. Yates and Franzen et al. do not teach updating a database with the determined molecular structures. Moore et al. teaches updating a database with the determined molecular structures (see entire document, particularly column 2, line 55 through column 3, line 6). It would have been obvious for one of ordinary skill in the art to update a database with the molecular structures determined by the method of Yates, since Moore et al. (col. 2, line 55 through col. 3, line 6) explains that updating a database with molecular structure data allows "the routine integration of chemical structure data with other related

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information...to allow better usage of all types of chemical information in both commercial and research settings", allows "the user to be notified of any new chemicals that are entered into the database", and allows users to "later call up this information in a quick and efficient manner without re-entering or performing previously run queries".

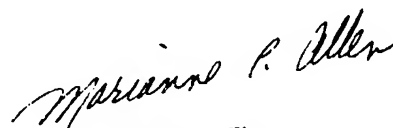
### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew A. Kenedy whose telephone number is 703-305-4842. The examiner can normally be reached on Monday-Friday 9:00am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on 703-308-4028. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4842.

A.A.K.  
10-27-03

  
MARIANNE P. ALLEN  
PRIMARY EXAMINER  
GROUP 1800